

-- IN THE CLAIMS --

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method for identifying an interacting set of molecules comprising:

A) generating first ~~protein~~ enzyme fragments and second ~~protein~~ enzyme fragments of an enzyme ~~protein~~ reporter molecule which have a directly or indirectly detectable activity when reconstituted and/or associated;

B) coupling said first ~~protein~~ enzyme fragments to members of a first panel of molecules;

C) coupling said second ~~protein~~ enzyme fragments to members of a second panel of molecules;

D) mixing the products of B) and C);

E) directly or indirectly testing for reconstitution of said ~~protein~~ enzyme activity when said ~~protein~~ enzyme fragments are associated; and

F) identifying the panel members whose interaction resulted in said activity and which thus form an interacting set.

Claim 2 (canceled)

3. (currently amended) A method of Claim 1 wherein ~~at least one of~~ said first panel comprises a library of molecules.

4. (previously presented) A method of Claim 1 wherein at least one of said first panel and said second panel comprise a library of molecules.

Claims 5-8 (canceled without prejudice or waiver)

Claim 9. (canceled without prejudice or waiver)

Claims 10-17 (canceled without prejudice or waiver)

18. (canceled without prejudice or waiver)

19. (currently amended) The method of claim 18 wherein said enzyme fragments are DHFR fragments.

20. (canceled without prejudice or waiver)

21. (currently amended) A method useful for large scale panel-panel screening for the identification of an interacting set of molecules, selected from the group consisting of interacting polypeptide partners and interacting protein partners, comprising:

(a) generating first fragments and second fragments of a reporter ~~molecule~~ protein which fragments have a directly or indirectly detectable activity when reconstituted and/or associated;

(b) coupling said first protein fragments to members of a first panel of molecules to make first products;

(c) coupling said second protein fragments to members of a second panel of molecules to make second products;

(d) mixing said first products of step (b) and said second products of step (c) ;

(e) directly or indirectly testing in vivo for reporter ~~molecule~~ protein activity resulting from the interaction of at least one of said first products with at least one of said second products; and

(f) identifying the interacting set of said members of said first panel and said members of said second panel associated with said first products and said second products which interacted to give said activity; ~~wherein said first fragments and said second fragments are fragments of a DHFR.~~

22. (currently amended) A method of claim 21 wherein said protein fragments ~~of~~ are enzyme fragments of DHFR ~~are~~ selected from the group consisting of fragments of wild type DHFR, fragments of rationally designed DHFR, fragments of mDHFR, and fragments of DHFR-Ile114Ala .

23. (currently amended) A method of claim 22~~4~~ wherein said activity is enzymatic activity of DHFR.

24. (previously presented) A method of claim 21 wherein at least one of said first panel and said second panel comprises a library of molecules.

25. (previously presented) A method of claim 21 wherein at least one of said first panel of molecules and said second panel of molecules comprises leucine zipper forming peptides.

26. (previously presented) A method of claim 25 wherein at least one of said first panel of molecules and said second panel of molecules comprises leucine zipper forming molecules selected from the group consisting of WinZip A1 interactive peptides and WinZip B1 interactive peptides.

27. (currently amended) A method for identifying an interacting set of molecules comprising:

(a) generating first fragments and second fragments of a reporter molecule which fragments have a directly or indirectly detectable activity when reconstituted and/or associated;

(b) coupling said first fragments to members of a first panel of molecules;

(c) coupling said second fragments to members of a second panel of molecules;

(d) mixing the first products of step b) and the second products of step c) ;
(e) directly or indirectly testing in vivo for reporter molecule activity resulting from the interaction of at least one of said first products with at least one of said second products; and

(f) identifying the interacting subset of said members of said first panel and said members of said second panel associated with said first products and said second products which interacted to give said activity; wherein said first fragments and said second fragments are fragments of a DHFR and wherein both said first panel of molecules and said second panel of molecules comprise leucine zipper forming molecules.

28. (previously presented) A method of claim 27 wherein at least one of said first panel and said second panel comprises a library of molecules based on the panels of proteins selected from the group consisting of WinZip A1 interacting peptides and WinZip B1 interacting peptides.

29. (previously presented) A method of claim 27 wherein said fragments of DHFR are selected from the group consisting of fragments of wild type DHFR, fragments of rationally designed DHFR, fragments of mDHFR, and fragments of DHFR-Ile114Ala .

30. (previously presented) A method of claim 27 wherein said activity is enzymatic activity of DHFR.

31. (currently amended) A method for identifying highest reporter molecule activity used for identifying an interacting set of molecules comprising:

(a) generating first fragments and second fragments of a reporter molecule which fragments have a directly or indirectly detectable activity when reconstituted and/or associated;

(b) coupling said first fragments to members of a first panel of molecules;

(c) coupling said second fragments to members of a second panel of molecules;

(d) mixing the first products of step b) and the second products of step c) ;

(e) directly or indirectly testing in vivo for reporter molecule activity resulting from the interaction of at least one of said first products with at least one of said second products; and

(f) identifying the interacting subset of said members of said first panel and said members of said second panel associated with said first products and said second products which interacted to give said activity; wherein said first fragments and said second fragments are fragments of DHFR; and wherein said second fragments are selected from the group consisting of (1)DHFR fragments with lower avidity than wild type DHFR and (2) DHFR[2:I114A].

32. (previously presented) A method of claim 31 wherein at least one of said first panel and said second panel comprises a library of molecules.

33. (previously presented) A method of claim 31 wherein at least one of said first panel of molecules and said second panel of molecules comprise leucine zipper forming molecules.